

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION OF)	
DELMARVA POWER & LIGHT COMPANY FOR)	PSC DOCKET NO. 11-528
AN INCREASE IN ELECTRIC BASE RATES)	
AND MISCELLANEOUS TARIFF CHANGES)	
(FILED DECEMBER 2, 2011))	

DIRECT TESTIMONY OF

DAVID C. PARCELL

ON BEHALF OF

COMMISSION STAFF

May 15, 2012

TABLE OF CONTENTS

I.	Statement of Qualifications.....	1
II.	Purpose of Testimony	2
III.	Approach of TAI Cost of Capital Analyses	3
	A. Description of DP&L	3
	B. Selection of Proxy Groups	5
IV.	Capital Structure Analyses.....	5
V.	Cost Rate for Debt	7
VI.	Cost of Equity Analysis	7
	A. Economic/Legal Principles and Methodologies	7
	B. General Economic Conditions	10
	C. Discounted Cash Flow Analysis	14
	D. Capital Asset Pricing Model Analysis	17
	E. Comparable Earnings Analysis.....	20
	F. Return on Equity Recommendation.....	24
VII.	Total Cost of Capital	25
VIII.	Impact of Proposed Regulatory Mechanisms	26
IX.	Critique of DP&L’s Cost of Capital Request	28

**PRE-FILED DIRECT TESTIMONY OF DAVID C. PARCELL
ON BEHALF OF COMMISSION STAFF**

I. STATEMENT OF QUALIFICATIONS

Q. Please state your name and address.

A. My name is David C. Parcell. My business address is Suite 580, 9030 Stony Point Parkway, Richmond, Virginia 23235.

Q. By whom are you employed?

A. I am President of Technical Associates, Inc., ("TAI"), which is a firm specializing in public utility regulation.

Q. Please describe TAI and the services it provides.

A. TAI is an economic consulting firm that was established in 1969. Since its establishment, members of the firm have conducted studies and provided expert testimony in several hundred regulatory proceedings involving the establishment of rate levels and related issues for public utilities and other regulated industries. These studies and/or testimonies have been prepared on behalf of numerous Public Utility Commission staffs and intervenor groups, such as public counsels and state Attorneys General.

Q. What is your educational and professional background?

A. I hold B.A. (1969) and M.A. (1970) degrees in economics and business from Virginia Polytechnic and State University (VA Tech) and a M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with TAI since its inception in 1969.

Q. Please summarize your experience in testifying in rate proceedings involving regulated companies.

A. I have been testifying on cost of capital, and related financial issues, involving public utilities since 1972. Throughout my career, I have filed testimony and/or testified in

1 about 480 public utility proceedings. These proceedings have involved electric, natural
2 gas distribution, natural gas pipeline, telephone/telecommunications, and
3 water/wastewater companies. These testimonies have been filed in more than 50 state
4 and federal regulatory agencies in the United States and Canada. Attachment 1 provides
5 a more complete description of my experience and qualifications.
6

7 **Q. Have you previously testified before this Commission?**

8 A. Yes, I have. Since 1997, I have testified in approximately 20 public utility proceedings
9 before this Commission, all on behalf of the Commission Staff. Several of these
10 proceedings were Delmarva Power & Light Co. ("DP&L") rate proceedings.
11

12 **II. PURPOSE OF TESTIMONY**
13

14 **Q. What is the purpose of your testimony in this proceeding?**

15 A. The purpose of my testimony is to address the cost of capital for DP&L relative to its
16 application. In addition, since DP&L is owned by Pepco Holdings, Inc. ("Pepco
17 Holdings"), I have also evaluated Pepco Holdings in my analyses.
18

19 **Q. On whose behalf are you submitting this testimony?**

20 A. I have been retained by the Commission Staff
21

22 **Q. Please summarize your cost of capital analyses and conclusions.**

23 A. It is my recommendation that DP&L's cost of capital be established based upon the
24 following:

- 25 • A capital structure with 50.52 percent debt and 49.48 percent equity as of
26 September 30, 2011, the same capital structure proposed by DP&L;
- 27 • A cost of debt of 5.05 percent, the September 30, 2011 embedded cost of
28 debt for DP&L;
- 29 • A cost of equity in a range of 9.35 percent to 9.75 percent (9.55 percent
30 mid-point), based on the end results of three cost of equity models;

- Discounted Cash Flow (“DCF”) results of 9.1 percent to 9.6 percent (9.35 percent mid-point);
- Capital Asset Pricing Model (“CAPM”) results of 6.7 percent to 6.8 percent;
- Comparable Earnings Model (“CEM”) results of 9.5 percent to 10.0 percent (9.75 percent mid-point); and,
- These DCF, CAPM, and CEM analyses are applied to two groups of proxy, publicly-traded electric utilities.

Q. What are your cost of capital recommendations for DP&L?

A. My recommendations are shown on Exhibit DCP-1, Schedule 1 and are as follows:

Capital	Percent	Cost	Weighted Cost
Debt	50.52%	5.05%	2.55%
Common Equity	49.48%	9.35-9.75%	4.63-4.82%
			<u>7.18-7.38%</u>
			(7.28% mid-point)

Q. How do your cost of capital recommendations compare with the cost of capital requested by DP&L?

A. DP&L is requesting a total cost of capital of 7.87 percent, which reflects a return on equity of 10.75 percent.

III. APPROACH OF TAI COST OF CAPITAL ANALYSES

A. Description of DP&L

Q. Please describe DP&L and its ownership structure.

A. DP&L is a utility that provides electric transmission, distribution, and default supply to Delaware and portions of Maryland. It also supplies natural gas service in Northern Delaware. DP&L is a wholly-owned subsidiary of Pepco Holdings.

Two mergers over the past several years have resulted in changes in the organization structure of this company. In 1998, DP&L combined with Atlantic Energy, Inc. (parent company of Atlantic City Electric Company – ACE) to form Conectiv, a holding company for DP&L and ACE. In 2002, Conectiv was acquired by Pepco Holdings (formerly Potomac Electric Power Co.). Conectiv is now a subsidiary of Pepco Holdings and DP&L and ACE are subsidiaries of Conectiv.

Q. Please describe Pepco Holdings.

A. Pepco Holdings was created in connection with the 2002 merger of Potomac Electric Power Co. and Conectiv. This is a holding company whose primary subsidiaries are:

- Potomac Electric Power Company (“Pepco”) – a regulated utility that delivers electricity in Washington, D.C. and its Maryland suburbs;
- Conectiv, LLC – an entity that owns DP&L and Atlantic City Electric Company, which provide electric and gas delivery in Delaware, Maryland and New Jersey;
- Pepco Energy Services, Inc. – a provider of energy efficiency and renewable energy services; and,
- Potomac Capital Investment Corporation – invests in energy-related financial investments.

Within this framework, DP&L, ACE and Pepco remain as separate operating public utilities.

Q. What is the current bond ratings of DP&L?

A. The present bond ratings (senior secured debt) of DP&L are as follows:

Moody’s	A3
Standard & Poor’s	A

Q. What have been the trends in DP&L’s and Pepco Holdings’ bond ratings?

A. This is shown on Schedule 2, which indicates two points. First, DP&L has experienced upgrades in its ratings since 2007. Second, the ratings of DP&L are similar to those of

Potomac Electric Power Company and Atlantic City Electric, but higher than those of Pepco Holdings.

B. Selection of Proxy Groups

Q. How did you select your group of proxy companies?

A. I selected a group of ten publicly-traded electric utilities. These are identified as Schedule 3, along with the criteria used to select them.

Q. Why are these proxy companies a proper standard for estimating the cost of capital for DP&L?

A. These companies are all publicly-traded electric utilities that share similar characteristics to DP&L, such as size, capital structure ratios, and security ratings. As such, they can be used as an estimate of the market-based cost of equity for DP&L.

Q. Have you performed cost of equity analyses for any other companies?

A. As a check on my DCF, CAPM, and CEM analyses for my proxy group, I have also used a secondary proxy group. This group is comprised of the proxy electric utilities used by DP&L witness Hevert.

IV. CAPITAL STRUCTURE ANALYSES

Q. What have been the recent capital structures of DP&L?

A. The recent capital structure ratios of DP&L are shown on Schedule 4, Page 1 of 3. This indicates the following capital structure ratios:

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Total Debt	50.0%	51.2%	49.3%	50.7%	51.7%
Common Equity	50.0%	44.8%	50.7%	49.3%	48.3%

This reflects a capital structure with approximately 50 percent equity and 50 percent debt throughout the past five years.

Page 2 of Schedule 4 shows the capital structures of DP&L's parent company – Pepco Holdings:

	2007	2008	2009	2010	2011
Total Debt	54.2%	56.2%	56.5%	49.7%	51.3%
Common Equity	45.8%	43.8%	43.5%	50.3%	48.7%

This reflects similar capital structures to those of DP&L since 2010.

Page 3 of Schedule 4 shows the 2011 capital structures of Pepco Holdings' regulated subsidiaries. This indicates that DP&L's capital structure is similar to the other regulated subsidiaries of Pepco Holdings.

Q. What are the “target” capital structure ratios of DP&L?

A. According to DP&L's response to PSC-COC-16, it appears that Pepco Holdings has an objective to maintain DP&L's equity ratio between 48 percent and 50 percent.

Q. How do the DP&L and Pepco Holdings capital structure ratios over this period compare to other electric utilities?

A. Schedule 5 shows the capital structure ratios of two groups of electric and combination gas/electric companies over the 2007-2011 period. The average common equity ratios for these groups are as follows:

	2007	2008	2009	2010	2011
Electric ^{a/}	46%	45%	46%	46%	47%
Gas/Electric ^{b/}	46%	43%	45%	46%	46%

^{a/} Electric utility group identified in AUS Utility Reports.

^{b/} Combination gas/electric utility group identified in AUS Utility Reports.

In general, these companies have maintained common equity ratios of about 45 percent. This is slightly lower than the common equity ratios of DP&L over this period.

Q. What do you believe is an appropriate capital structure for DP&L, relative to this proceeding?

1 A. I use capital structure for DP&L of 49.48 percent common equity and 50.52 percent debt,
2 as requested by the Company. This is the capital structure of the Company as of September
3 30, 2011 (proforma). I note that this capital structure's common equity ratio exceeds the
4 average equity ratios of the electric groups.

5 I also note that the capital structure proposed by DP&L does not include short-
6 term debt. I generally favor the inclusion of short-term debt in a utility's capital structure
7 for ratemaking purposes, especially when it can be shown to be consistently financing a
8 portion of rate base. It is apparent that DP&L has not consistently utilized short-term
9 debt in recent years, as is indicated on my Schedule 4, page 1. As a result, I have not
10 included short-term debt.

11
12 **V. COST RATE FOR DEBT**

13
14 **Q. What is the current cost of DP&L's debt?**

15 A. I propose to use the consolidated cost of debt of DP&L in this proceeding. This cost rate
16 is 5.05 percent, as shown in the Company's filing.

17
18 **VI. COST OF EQUITY ANALYSIS**

19
20 **A. Economic/Legal Principles and Methodologies**

21
22 **Q. What are the primary economic and legal principles that establish the standards for
23 determining a fair rate of return for a regulated utility?**

24 A. Regulated utility rates are normally established in a manner designed to allow the
25 recovery of their costs, including capital costs. This is frequently referred to as "cost of
26 service" ratemaking. Rates for regulated utilities traditionally have been primarily
27 established using the "rate base – rate of return" concept. Under this method, utilities are
28 allowed to recover a level of operating expenses, taxes, and depreciation deemed
29 reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of
30 return on the assets utilized (i.e., rate base) in providing service to their customers.

1 The rate base is derived from the asset side of the utility's balance sheet as a
2 dollar amount and the rate of return is developed from the liabilities/owners' equity side
3 of the balance sheet as a percentage. Thus, the revenue impact of the cost of capital is
4 derived by multiplying the rate base by the rate of return.

5 The rate of return is developed from the cost of capital, which is estimated by
6 weighting the capital structure components (i.e., debt and common equity) by their
7 percentages in the capital structure and multiplying these values by their cost rates. This
8 is also known as the weighted cost of capital.

9 Technically, "fair rate of return" is a legal and accounting concept that refers to an
10 ex post (after the fact) earned return on an asset base, while the cost of capital is an
11 economic and financial concept which refers to an ex ante (before the fact) expected or
12 required return on a liability base. In regulatory proceedings, however, the two terms are
13 often used interchangeably, and I have equated the two concepts in my testimony.

14 From an economic standpoint, a fair rate of return is normally interpreted to mean
15 that an efficient and economically managed utility will be able to maintain its financial
16 integrity, attract capital, and establish comparable returns for similar risk investments.
17 These concepts are derived from economic and financial theory and are generally
18 implemented using financial models and economic concepts.

19 Although I am not a lawyer and I do not offer a legal opinion, my testimony is
20 based on my understanding that two United States Supreme Court decisions provide the
21 controlling standards for a fair rate of return. The first decision is *Bluefield Water Works*
22 *and Improvement Co. v. Public Serv. Comm'n of West Virginia*, 262 U.S. 679 (1923). In
23 this decision, the Court stated:

24 What annual rate will constitute just compensation depends upon
25 many circumstances and must be determined by the exercise of fair
26 and enlightened judgment, having regard to all relevant facts. A
27 public utility is entitled to such rates as will permit it to earn a
28 return on the value of the property which it employs for the
29 convenience of the public equal to that generally being made at the
30 same time and in the same general part of the country on
31 investments in other business undertakings which are attended by
32 corresponding risks and uncertainties; but it has no constitutional
33 right to profits such as are realized or anticipated in highly
34 profitable enterprises or speculative ventures. The return should be
35 reasonably sufficient to assure confidence in the financial

1 soundness of the utility, and should be adequate, under efficient
2 and economical management, to maintain and support its credit
3 and enable it to raise the money necessary for the proper discharge
4 of its public duties. A rate of return may be reasonable at one time,
5 and become too high or too low by changes affecting opportunities
6 for investment, the money market, and business conditions
7 generally.
8

9 It is generally understood that the *Bluefield* decision established the following standards
10 for a fair rate of return: comparable earnings, financial integrity, and capital attraction. It
11 also noted that required returns change over time, and there is an underlying assumption
12 that the utility be operated in an efficient manner.

13 The second decision is the *Federal Power Comm'n v. Hope Natural Gas Co.*, 320
14 U.S. 591 (1942). In that decision, the Court stated:

15 The rate-making process under the [Natural Gas] Act, i.e., the
16 fixing of 'just and reasonable' rates, involves a balancing of the
17 investor and consumer interests From the investor or company
18 point of view it is important that there be enough revenue not only
19 for operating expenses but also for the capital costs of the business.
20 These include service on the debt and dividends on the stock. By
21 that standard the return to the equity owner should be
22 commensurate with returns on investments in other enterprises
23 having corresponding risks. That return, moreover, should be
24 sufficient to assure confidence in the financial integrity of the
25 enterprise, so as to maintain its credit and to attract capital.
26

27 The three economic and financial parameters in the *Bluefield* and *Hope* decisions –
28 comparable earnings, financial integrity, and capital attraction – reflect the economic
29 criteria encompassed in the “opportunity cost” principle of economics. The opportunity
30 cost principle provides that a utility and its investors should be afforded an opportunity
31 (not a guarantee) to earn a return commensurate with returns they could expect to achieve
32 on investments of similar risk. The opportunity cost principle is consistent with the
33 fundamental premise on which regulation rests, namely, that it is intended to act as a
34 surrogate for competition.

35
36 **Q. How can these parameters be employed to estimate the cost of capital for a utility?**

1 A. Neither the courts nor economic/financial theory have developed exact and mechanical
2 procedures for precisely determining the cost of capital. This is the case because the cost
3 of capital is an opportunity cost and is prospective-looking, which dictates that it must be
4 estimated.

5 There are several useful models that can be employed to assist in estimating the
6 cost of equity capital, which is the capital structure item that is the most difficult to
7 determine. These include the DCF, CAPM, CEM and risk premium (“RP”) methods.
8

9 **Q. Which methods have you employed in your analyses of the cost of common equity in**
10 **this proceeding?**

11 A. I have utilized three methodologies to determine DP&L’s cost of common equity: the
12 DCF, CAPM and CEM methods. Each of these methodologies will be described in more
13 detail in the testimony that follows.
14

15 **B. General Economic Conditions**
16

17 **Q. Are economic and financial conditions important in determining the cost of capital**
18 **for DP&L?**

19 A. Yes. The cost of capital, for both fixed-cost (debt and preferred stock) components and
20 common equity, are determined in part by current and prospective economic and
21 financial conditions. At any given time, each of the following factors has an influence on
22 the cost of capital:

- 23 • The level of economic activity (i.e., growth rate of the economy);
 - 24 • The stage of the business cycle (i.e., recession, expansion, or transition);
 - 25 • The level of inflation;
 - 26 • The level and trend of interest rates; and,
 - 27 • Expected economic conditions.
- 28

29 My understanding is that this position is consistent with the *Bluefield* decision that noted
30 “[a] rate of return may be reasonable at one time, and become too high or too low by

changes affecting opportunities for investment, the money market, and business conditions generally.” *Bluefield*, 262 U.S. at 679.

Q. What indicators of economic and financial activity did you evaluate in your analyses?

A. I examined several sets of economic statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over four full business cycles, allowing for an assessment of changes in long-term trends. This period also approximates the beginning and continuation of active rate case activities by public utilities.

A business cycle is commonly defined as a complete period of expansion (recovery and growth) and contraction (recession). A full business cycle is a useful and convenient period over which to measure levels and trends in long-term capital costs because it incorporates the cyclical (i.e., stage of business cycle) influences, and thus, permits a comparison of structural (or long-term) trends.

Q. Please describe the timeframe of the four prior business cycles and the current cycle.

A. The four prior complete cycles and current cycle cover the following periods:

<u>Business Cycle</u>	<u>Expansion Cycle</u>	<u>Contraction Period</u>
1975-1982	Mar. 1975-July 1981	Aug. 1981-Oct. 1982
1982-1991	Nov. 1982-July 1990	Aug. 1990-Mar. 1991
1991-2001	Apr. 1991-Mar. 2001	Apr. 2001-Nov. 2001
2001-2009	Dec. 2001-Nov. 2007	Dec. 2007-June 2009
Current	July 2009-	

Source: National Bureau of Economic, Research, “Business Cycle Expansions and Contractions.”

Q. Do you have any general observations concerning the recent trends in economic conditions and their impact on capital costs over this broad period?

A. Yes, I do. As I will describe below, until the end of 2007, the United States economy had enjoyed general prosperity and stability since the early 1980s.¹ This period had been

¹ There was a “Tech Bubble” in 1999-2000, in which prices of many technology stocks encountered a dramatic run-up that was followed by an equally-dramatic decline in 2001-2002.

1 characterized by longer economic expansions, relatively tame contractions, relatively low
2 and declining inflation, and declining interest rates and other capital costs.

3 However, in 2008 and 2009, the economy declined significantly, initially as a
4 result of the 2007 collapse of the “sub-prime” mortgage market and the related liquidity
5 crisis in the financial sector of the economy. Subsequently, this financial crisis
6 intensified with a more broad-based decline, initially based on a substantial increase in
7 petroleum prices and a dramatic decline in the U.S. financial sector, culminating with the
8 collapse and/or bailouts of a significant number of well-known institutions such as Bear
9 Stearns, Lehman Brothers, Merrill Lynch, Freddie Mac, Fannie Mae, AIG and Wachovia.
10 The recession also witnessed the demise of national companies such as Circuit City and
11 the bankruptcies of automotive manufacturers such as Chrysler and General Motors.

12 This decline has been described as the worst financial crisis since the Great
13 Depression and has been referred to as the “Great Recession.” The U.S. and other
14 governments have implemented and continue to implement unprecedented actions to
15 attempt to correct or minimize the scope and effects of this recession.

16 It appears that the recession reached its low point in mid-2009 and that the
17 economy has since begun to expand again, although at a slow and uneven rate. However,
18 the length and severity of the recession, as well as a relatively slow recovery, indicates
19 that the impacts of the recession have been and will be felt for an extended period of
20 time. As an example of this, the U.S. unemployment rate still stands at nearly 9 percent –
21 close to the highest rate in decades.

22
23 **Q. Please describe recent and current economic and financial conditions and their**
24 **impact on the cost of capital.**

25 A. Schedule 6 shows several sets of relevant economic data for the cited time periods. Pages
26 1 and 2 contain general macroeconomic statistics; pages 3 and 4 show interest rates; and
27 pages 5 and 6 contain equity market statistics.

28 Pages 1 and 2 show that 2007 was the sixth year of an economic expansion but, as
29 I previously noted, the economy subsequently entered a significant decline, as indicated
30 by the growth in real (i.e., adjusted for inflation) Gross Domestic Product (“GDP”),
31 industrial production, and an increase in the unemployment rate. This recession lasted

1 until mid-2009, making it a longer-than-normal recession, as well as a deeper recession.
2 Since then, economic growth has been erratic and lower than the initial periods of prior
3 expansions.

4 Pages 1 and 2 also show the rate of inflation. As reflected in the Consumer Price
5 Index (“CPI”), for example, inflation rose significantly during the 1975-1982 business
6 cycle and reached double-digit levels in 1979-1980. The rate of inflation declined
7 substantially beginning in 1981, and remained at or below 6.1 percent during the 1983-
8 1991 business cycle. Since 2008, the CPI has been 3.0 percent or lower. These are the
9 lowest levels of the past 35 years and are indicative of low inflation, which is reflective
10 of lower capital costs.

11
12 **Q. What have been the trends in interest rates over the four prior business cycles and**
13 **at the current time?**

14 A. Pages 3 and 4 of Schedule 6 show several series of interest rates. Rates rose sharply to
15 record levels in 1975-1981 when the inflation rate was high and generally rising. Interest
16 rates declined substantially in conjunction with inflation rates during the remainder of the
17 1980s and throughout the 1990s. Interest rates declined even further from 2000-2005 and
18 generally recorded their then-lowest levels since the 1960s.

19 Since 2008, the Federal Reserve has lowered the Federal Funds rate (i.e., short-
20 term rate) on several occasions; currently it is 0.25 percent, an all-time low. In 2008 and
21 early 2009, there was a pronounced decline in short-term rates and long-term U.S.
22 Treasury Securities yields, and an increase in corporate bond yields, reflecting the “flight
23 to safety,” wherein there was a reluctance of investors to purchase common stocks and
24 corporate bonds while concomitantly moving their money into very safe government
25 bonds. Since then, as seen on page 4, both U.S. and corporate bond yields have declined
26 to their lowest levels in the past four business cycles and in more than 35 years, with
27 lending rates remaining at historically low levels, again reflective of lower capital costs.

28
29 **Q. What trends does Schedule 6 show for trends of common share prices?**

30 A. Pages 5 and 6 show several series of common stock prices and ratios. These indicate that
31 stock prices were essentially stagnant during the high inflation/high interest rate

environment of the late 1970s and early 1980s. The 1983-1991 business cycle and the more recent cycles witnessed a significant upward trend in stock prices. The beginning of the recent financial crisis saw stock prices decline precipitously, as stock prices in 2008 and early 2009 were down significantly from 2007 levels, reflecting the financial/economic crisis. Beginning in the second quarter of 2009, prices have recovered substantially and have reached the levels achieved prior to the “crash.”

Q. What conclusions do you draw from your discussion of economic and financial conditions?

A. It is apparent that recent economic and financial circumstances have been different from any that have prevailed since at least the 1930s. The late 2008-early 2009 deterioration in stock prices, the decline in U.S. Treasury bond yields, and an increase in corporate bond yields were evidenced in the recent “flight to safety.” On the other side of this “flight to safety” is the negative perception of the recent declines, which significantly reduced the value of most retirement accounts, investment portfolios and other assets. One significant aspect of this has been a decline in investor expectations of returns, including stock returns. Finally, as noted above, utility interest rates are currently at levels below those prevailing prior to the financial crisis of late 2008-early 2009 and are near the lowest level in the past 35 years. I also note that the events of the past four years have made public utility stocks, with their consistent and rising dividend rates, relatively more attractive to investors.²

C. Discounted Cash Flow Analysis

Q. What is the theory and methodological basis of the discounted cash flow model?

A. The DCF model is one of the oldest, as well as the most commonly-used, models for estimating the cost of common equity for public utilities. It is my understanding that the DCF methodology is most preferred by the Delaware Commission in determining cost of equity for regulated utilities. The DCF model is based on the “dividend discount model”

² See, for example, Investment Insights, On Wall Street, “S&P Looks to Utilities ETFs in Downtrodden Equities Market,” August 22, 2011, <http://www.onwallstreet.com/news/utility-stocks-etfs-investments-products-2679728-1.html>.

of financial theory, which maintains that the value (price) of any security or commodity is the discounted present value of all future cash flows.

The most common variant of the DCF model assumes that dividends are expected to grow at a constant rate. This variant of the dividend discount model is known as the constant growth or Gordon DCF model. In this framework, cost of capital is derived by the following formula:

$$K = \frac{D}{P} + g$$

where: P = current price

D = current dividend rate

K = discount rate (cost of capital)

g = constant rate of expected growth

This formula essentially recognizes that the return expected or required by investors is comprised of two factors: the dividend yield (current income) and expected growth in dividends (future income).

Q. Please explain how you have employed the DCF model.

A. I have utilized the constant growth DCF model. In doing so, I have combined the current dividend yield for the groups of proxy company stocks described in a previous section with several indicators of expected dividend growth.

Q. How did you derive the dividend yield component of the DCF equation?

A. There are several methods that can be used for calculating the dividend yield component. These methods generally differ in the manner in which the dividend rate is employed (i.e. current versus future dividends or annual versus quarterly compounding of dividends). I believe the most appropriate dividend yield component is a quarterly compounding variant, which is expressed as follows:

$$Yield = \frac{D_0(1 + 0.5g)}{P_0}$$

1 This dividend yield component recognizes the timing of dividend payments and dividend
2 increases.

3 The P_0 in my yield calculation is the average (of high and low) stock price for
4 each proxy company for the most recent three-month period (January-March 2012). The
5 D_0 is the current annualized dividend rate for each proxy company.
6

7 **Q. How have you estimated the dividend growth component of the DCF equation?**

8 A. The dividend growth rate component of the DCF model is usually the most crucial and
9 controversial element involved in using this methodology. The objective of estimating
10 the dividend growth component is to reflect the growth expected by investors that is
11 embodied in the price (and yield) of a company's stock. As such, it is important to
12 recognize that individual investors have different expectations and consider alternative
13 indicators in deriving their expectations. This is evidenced by the fact that every
14 investment decision resulting in the purchase of a particular stock is matched by another
15 investment decision to sell that stock.

16 A wide array of indicators exist for estimating the growth expectations of
17 investors. As a result, it is evident that no single indicator of growth is always used by all
18 investors. It, therefore, is necessary to consider alternative indicators of dividend growth
19 in deriving the growth component of the DCF model.

20 I have considered five indicators of growth in my DCF analyses. These are:

- 21 1. Years 2007-2011 (5-year average) earnings retention, or
22 fundamental growth (per Value Line);
- 23 2. Five-year average of historic growth in earnings per share (EPS),
24 dividends per share (DPS), and book value per share (BVPS per
25 Value Line);
- 26 3. Years 2012, 2013 and 2015-2017 projections of earnings retention
27 growth (per Value Line);
- 28 4. Years 2008-2010 to 2015-2017 projections of EPS, DPS, and
29 BVPS (per Value Line); and,
- 30 5. Five-year projections of EPS growth as reported by First Call (per
31 Yahoo Finance).

I believe this combination of growth indicators is a representative and appropriate set with which to begin the process of estimating investor expectations of dividend growth for the groups of proxy companies. I also believe that these growth indicators reflect the types of information that investors consider in making their investment decisions. As I indicated previously, investors have an array of information available to them, all of which should be expected to have some impact on their decision-making process.

Q. Please describe your DCF calculations.

A. Schedule 7 presents my DCF analysis. Page 1 shows the calculation of the "raw" (i.e. prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3 show the growth rate for the groups of proxy companies. Page 4 shows the "raw" DCF calculations, which are presented on two bases: mean and median. These results can be summarized as follows:

	Mean	Median	Mean		Median	
			Low ^a	High ^b	Low ^a	High ^b
Proxy Group	8.6%	8.5%	7.9%	9.4%	7.9%	9.1%
Hevert Group	8.5%	8.7%	7.3%	9.6%	7.8%	9.3%

^a Using low growth rate.

^b Using high growth rate.

The DCF results in Schedule 7 indicate average (mean and median) DCF cost rates of about 8.5 percent to 8.7 percent. The "high" DCF results are 9.1 percent to 9.4 percent for the proxy group and 9.3 percent to 9.6 percent for the Hevert group.

Q. What do you conclude from your DCF analyses?

A. Based upon my analyses, I believe a range of 9.1 percent to 9.6 percent represents the current DCF cost of equity for DP&L. This focuses on the highest DCF results for each proxy group. The mid-point of this range is 9.35 percent.

D. Capital Asset Pricing Model Analysis

Q. Please describe the theory and methodological basis of the capital asset pricing model.

A. The CAPM is a version of the risk premium method. The CAPM describes and measures the relationship between a security's investment risk and its market rate of return. The CAPM was developed in the 1960s and 1970s as an extension of modern portfolio theory ("MPT"), which studies the relationships among risk, diversification, and expected returns.

Q. How is the CAPM derived?

A. The general form of the CAPM is:

$$K = R_f + \beta(R_m - R_f)$$

where: K = cost of equity

R_f = risk free rate

R_m = return on market

β = beta

R_m-R_f = market risk premium

As noted previously, the CAPM is a variant of the risk premium method. I believe the CAPM is generally superior to the simple risk premium method because the CAPM specifically recognizes the risk of a particular company or industry (i.e., beta), whereas the simple risk premium method does not, but rather assumes the same cost of equity for all companies exhibiting similar bond ratings.

Q. What companies have you utilized to perform your CAPM analyses?

A. I have performed CAPM analyses for the same groups of proxy firms evaluated in my DCF analyses.

Q. What rate did you use for the risk-free rate?

A. The first term of the CAPM is the risk-free rate (R_f). The risk-free rate reflects the level of return that can be achieved without accepting any risk.

1 In CAPM applications, the risk-free rate is generally recognized by use of U.S.
2 Treasury securities. Two general types of U.S. Treasury securities are often utilized as
3 the R_f component, short-term U.S. Treasury bills and long-term U.S. Treasury bonds.

4 I have performed CAPM calculations using the three-month average yield
5 (January-March 2012) for long-term (20-year) U.S. Treasury bonds. Over this three-
6 month period, these bonds had an average yield of 2.80 percent.

7
8 **Q. What is beta and what betas did you employ in your CAPM?**

9 A. Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation
10 to the overall market. Betas of less than 1 are considered less risky than the market,
11 whereas betas greater than 1 are more risky. Utility stocks traditionally have had betas
12 below 1. I utilized the most recent Value Line betas for each company in the groups of
13 proxy companies.

14
15 **Q. How did you estimate the market risk premium component?**

16 A. The market risk premium component ($R_m - R_f$) represents the investor-expected premium
17 of common stocks over the risk-free rate, or government bonds. For the purpose of
18 estimating the market risk premium, I considered alternative measures of returns of
19 Standard & Poor's ("S&P") 500 (a broad-based group of large U.S. companies) and 20-
20 year U.S. Treasury bonds.

21 First, I have compared the actual annual returns on equity of the S&P 500 with the
22 actual annual yields of U.S. Treasury bonds. Schedule 8 shows the return on equity for
23 the S&P 500 group for the period 1978-2010 (all available years reported by S&P). This
24 Schedule also indicates the annual yields on 20-year U.S. Treasury bonds, as well as the
25 annual differentials (i.e. risk premiums) between the S&P 500 and U.S. Treasury 20-year
26 bonds. Based upon these returns, I conclude that this measure of the risk premium is
27 about 6.34 percent.

28 I have also considered the total returns (i.e. dividends/interest plus capital
29 gains/losses) for the S&P 500 group as well as for long-term government bonds, as
30 tabulated by Morningstar (formerly Ibbotson Associates), using both arithmetic and

geometric means. I have considered the total returns for the entire 1926-2011 period, which are as follows:

	<u>S&P 500</u>	<u>L-T Gov't Bonds</u>	<u>Risk Premium</u>
Arithmetic	11.8%	6.1%	5.7%
Geometric	9.8%	5.7%	4.1%

I conclude from this that the expected risk premium is about 5.58 percent (i.e. average of all three risk premiums - 6.34 percent from Schedule 8 and 5.7 percent arithmetic and 4.1 percent geometric from Morningstar). I believe that a combination of arithmetic and geometric means is appropriate since investors have access to both types of means and presumably, both types are reflected in investment decisions and thus, stock prices and cost of capital. I note, in this regard, that mutual funds are required to report comparative returns on a geometric basis and that Value Line, a major source of investor information, provides both historic and prospective growth rates on a compound (i.e., geometric) basis.

Q. What are your CAPM results?

A. Schedule 9 shows my CAPM calculations using this risk premium. The results are:

	<u>Mean</u>	<u>Median</u>
Proxy Group	6.8%	6.7%
Hevert Group	6.7%	6.7%

Q. What is your conclusion concerning the CAPM cost of equity?

A. The CAPM results collectively indicate a cost of about 6.7 percent to 6.8 percent for the groups of proxy companies. I conclude that the CAPM cost of equity for DP&L is 6.8 percent, the upper end of the range.

E. Comparable Earnings Analysis

Q. Please describe the basis of the CEM.

A. The CEM is derived from the "corresponding risk" standard of the *Bluefield* and *Hope* cases. This method is thus based upon the economic concept of opportunity cost. As

1 previously noted, the cost of capital is an opportunity cost: the prospective return
2 available to investors from alternative investments of similar risk.

3 The CEM is designed to measure the returns expected to be earned on the original
4 cost book value of similar risk enterprises. Thus, this method provides a direct measure
5 of the fair return, because the CEM translates into practice the competitive principle upon
6 which regulation is based. This is the case because the CEM focuses on the
7 “corresponding risk” standard of the *Bluefield* and *Hope* decisions, which relates to the
8 returns earned by enterprises of corresponding risks and uncertainties.

9 The CEM normally examines the experienced and/or projected returns on book
10 common equity. The logic for examining returns on book equity follows from the use of
11 original-cost, rate-base regulation for public utilities, which uses a utility’s book common
12 equity to determine the cost of capital. This cost of capital is, in turn, used as the fair rate
13 of return which is then applied (multiplied) to the book value of rate base to establish the
14 dollar level of capital costs to be recovered by the utility. This technique is thus
15 consistent with the rate base methodology used to set utility rates.

16
17 **Q. How have you employed the CEM in your analysis of DP&L’s common equity**
18 **costs?**

19 **A.** I conducted the CEM by examining realized returns on equity for several groups of
20 companies and evaluating the investor acceptance of these returns by reference to the
21 resulting market-to-book ratios. In this manner, it is possible to assess the degree to
22 which a given level of return equates to the cost of capital. It is generally recognized for
23 utilities that market-to-book ratios of greater than one (i.e., 100%) reflect a situation
24 where a company is able to attract new equity capital without dilution (i.e., above book
25 value). As a result, one objective of a fair cost of equity is the maintenance of stock
26 prices above book value.

27 I would further note that the CEM analysis, as I have employed it, is based upon
28 market data (through the use of market-to-book ratios) and is thus essentially a market
29 test. As a result, my analysis is not subject to the criticisms occasionally made by some
30 who maintain that past earned returns do not represent the cost of capital. In addition, my
31 analysis also uses prospective returns and thus is not confined to historical data.

1 **Q. What time periods have you examined in your CEM analysis?**

2 A. My CEM analysis considers the experienced equity returns of the proxy groups of
3 utilities for the period 1992-2011 (i.e., the last twenty years). The CEM analysis requires
4 that I examine a relatively long period of time in order to determine trends in earnings
5 over at least a full business cycle. Further, in estimating a fair level of return for a future
6 period, it is important to examine earnings over a diverse period of time in order to avoid
7 any undue influence from unusual or abnormal conditions that may occur in a single year
8 or shorter period. Therefore, in forming my judgment of the current cost of equity I have
9 focused on two periods: 2002-2011 (the recent cycle) and 1992-2001 (the prior business
10 cycle).

11
12 **Q. Please describe your CEM analysis.**

13 A. Schedules 10 and 11 contain summaries of experienced returns on equity for several
14 groups of companies, while Schedule 12 presents a risk comparison of utilities versus
15 unregulated firms.

16 Schedule 10 shows the earned returns on average common equity and market-to-
17 book ratios for the groups of proxy utilities. These can be summarized as follows:

	Proxy Group	Hevert Group
Historic ROE		
Mean	9.4-11.5%	9.9-11.5%
Median	9.7-11.5%	9.7-12.0%
Historic M/B		
Mean	139-158%	143-156%
Median	131-154%	138-162%
Prospective ROE		
Mean	9.2-10.0%	9.1-9.6%
Median	8.8-9.5%	9.0-9.5%

24 These results indicate that historic returns of 9.4 percent to 12.0 have been
25 adequate to produce market-to-book ratios of 131 percent to 162 percent for the groups of
26 proxy utilities. Furthermore, projected returns on equity for 2012, 2013 and 2015-2017
27 are within a range of 8.8 percent to 10.0 percent for the utility groups. These relate to
28 2011 market-to-book ratios of 126 percent or higher.

1 **Q. Have you also reviewed earnings of unregulated firms?**

2 A. Yes. As an alternative, I also examined a group of largely unregulated firms. I have
3 examined the S&P 500 Composite group, since this is a well-recognized group of firms
4 that is widely utilized in the investment community and is indicative of the competitive
5 sector of the economy. Schedule 11 presents the earned returns on equity and market-to-
6 book ratios for the S&P 500 group over the past nineteen years. As this Schedule
7 indicates, over the two periods this group's average earned returns ranged from 12.4
8 percent to 14.7 percent with market-to-book ratios ranging between 258 percent and 341
9 percent.

10
11 **Q. How can the above information be used to estimate the cost of equity for DP&L?**

12 A. The recent earnings of the proxy utility and S&P 500 groups can be utilized as an
13 indication of the level of return realized and expected in the regulated and competitive
14 sectors of the economy. In order to apply these returns to the cost of equity for proxy
15 utilities, however, it is necessary to compare the risk levels of the utility industry with
16 those of the competitive sector. I have done this in Schedule 12, which compares several
17 risk indicators for the S&P 500 group and the utility groups. The information in this
18 schedule indicates that the S&P 500 group is more risky than the utility proxy groups.

19
20 **Q. What return on equity is indicated by the CEM analysis?**

21 A. Based on the recent earnings and market-to-book ratios, I believe the CE analysis
22 indicates that the cost of equity for the proxy utilities is no more than 9.5 percent to 10.0
23 percent. The mid-point of this range is 9.75 percent. Recent returns of 9.4 percent to
24 12.0 percent have resulted in market-to-book ratios of 131 and greater. Prospective
25 returns of 8.8 percent to 10.0 percent result in anticipated market-to-book ratios of over
26 125 percent. As a result, it is apparent that returns below this level would result in
27 market-to-book ratios of well above 100 percent. An earned return of 9.75 percent
28 should thus result in a market-to-book ratio of over 100 percent. As I indicated earlier,
29 the fact that market-to-book ratios substantially exceed 100 percent indicates that historic
30 and prospective returns of over 10 percent reflect earnings levels that exceed the cost of
31 equity for those regulated companies.

Please also note that my CEM analysis is not based on a mathematic formula approach, as are the DCF and CAPM methodologies. Rather, it is based on recent trends and current conditions in equity markets. Further, it is based on the direct relationship between returns on common stock and market-to-book ratios of common stock. In utility rate setting, a fair rate of return is based on the utility's assets (i.e., rate base) and the book value of the utility's capital structure. As stated earlier, maintenance of a financially stable utility's market-to-book ratio at 100 percent, or a bit higher, is fully adequate to maintain the utility's financial stability. On the other hand, a market price of a utility's common stock that is 150 percent or more above the stock's book value is indicative of earnings that exceed the utility's reasonable cost of capital. Thus, actual or projected earnings do not directly translate into a utility's reasonable cost of equity. Rather, they must be viewed in relation to the market-to-book ratios of the utility's common stock.

My 9.75 percent CEM recommendation is not designed to result in market-to-book ratios as low as 1.0 for DP&L. Rather, it is based on current market conditions and the proposition that ratepayers should not be required to pay rates based on earnings levels that result in excessive market-to-book ratios.

F. Return On Equity Recommendation

Q. Please summarize the results of your three cost of equity analyses.

A. My three methodologies produce the following:

	<u>Range</u>	<u>Mid-Point</u>
Discounted Cash Flow	9.1-9.6%	9.35%
Capital Asset Pricing Model	6.8%	6.80%
Comparable Earnings	9.5-10.0%	9.75%

These produce a broad range of 6.8 percent to 10.0 percent. The mid-points range from 6.8 percent to 9.75%. Excluding the CAPM results, the ranges are 9.1 percent to 10.0 percent and the mid-points are 9.35 percent to 9.75 percent.

1 **Q. What return on equity do you recommend for DP&L?**

2 A. I recommend a range of 9.35 percent to 9.75 percent, which reflects my DCF and CE
3 mid-point results.
4

5 **Q. Why are your CAPM results significantly lower than your DCF results?**

6 A. CAPM results are lower than the DCF results, and have been lower than CAPM results in
7 recent years. The two reasons for the lower CAPM results are the current relatively low
8 yields on U.S. Treasury bonds (i.e., risk-free rate) and a lower risk premium that reflects
9 the decline in stock prices in 2008 and 2009 (even though stock prices in 2011 and 2012
10 have largely recovered from their declines).
11

12 **Q. Does this mean that CAPM results should be discarded?**

13 A. No. These currently lower CAPM results are only one-half of the impact of recent
14 economic conditions. The other impact is on the DCF results, which are somewhat
15 higher currently due to the higher growth rate attributable to the depressed base period. It
16 would not be proper to disregard the lower CAPM results while not discounting the
17 higher DCF results.
18

19 **VII. TOTAL COST OF CAPITAL**
20

21 **Q. What is the total cost of capital that results from your capital structure, cost of debt
22 and cost of equity recommendations?**

23 A. This is shown on Schedule 1. This reflects the actual capital structure ratios of 49.48
24 percent equity and 50.52 percent debt, cost of long-term debt of 5.05 percent, and cost of
25 equity of 9.35 percent to 9.75 percent. This results in a total cost of capital range of 7.18
26 percent to 7.38 percent.
27

28 **Q. Does your cost of capital recommendation provide the Company with a sufficient
29 level of earnings to maintain its financial integrity?**

30 A. Yes, it does. Schedule 13 shows pre-tax coverage that would result if DP&L earned my
31 cost of capital recommendation. As the results indicate, my recommended range would

1 match a coverage level consistent with the benchmark range for an A-rated utility. In
2 addition, the debt ratio (which reflects the Company's proposed capital structure) exceeds
3 the benchmark for an A-rated utility.
4

5 **VIII. IMPACT OF PROPOSED REGULATORY MECHANISMS**

6

7 **Q. Has DP&L proposed any regulatory mechanisms that have the effect of enhancing**
8 **the recovery of its expenses and/or investments?**

9 A. Yes. DP&L is requesting three new regulatory mechanisms in this proceeding, which it
10 refers to as "revenue stabilization mechanisms." These are:

- 11 • Revenue decoupling via Modified Fixed Variable ("MVF") rate design;
 - 12 • Reliability Investment Recovery Mechanism ("RIM"), which is described by
13 DP&L witness Lowry as "an expedited cost recovery mechanism that would
14 target Delmarva's reliability-related capex costs"; and,
 - 15 • Use of a fully forecasted test period.
- 16

17 **Q. How would DP&L's risks be reduced by the approval and implementation of its**
18 **proposed regulatory mechanisms?**

19 A. The Company's risks would be significantly reduced if these mechanisms were to be
20 approved and implemented. One risk faced by all businesses, including utility
21 companies, is the risk of revenues covering all costs including investment costs. Revenue
22 collections that are volatile and/or subject to seasonal/weather influences often do not
23 match cost causation, resulting in periodic erosion of earnings.

24 DP&L's proposed regulatory mechanisms and rate design in this case basically
25 eliminate many of the risks associated with revenue volatility. The proposed SFV rate
26 design will reduce DP&L's risks of revenue recovery from volatility and systematic
27 trends in customer's average consumption. The proposed RIM will reduce DP&L's risk
28 of earnings from growing non-revenue producing plant investment. Finally, a fully
29 forecasted test year will reduce DP&L's risk of earnings from cost inflation and
30 systematic trends in customer growth. Individually and collectively, these regulatory
31 mechanisms, if adopted and implemented, will significantly reduce DP&L's risks. In

1 essence, DP&L is requesting that a significant portion of its risks be transferred from its
2 shareholders to its ratepayers.³
3

4 **Q. Have the rating agencies commented favorably on the approval and implementation**
5 **of regulatory mechanisms such as those proposed by DP&L?**

6 A. Yes, they have. Standard & Poor's made the following statements in a March 9, 2009
7 RatingsDirect report titled, "Regulatory Mechanisms Help Smooth Electric Utility Cash
8 Flow and Support Ratings":

9 we believe innovative ratemaking techniques and alternatives to
10 traditional base rate case applications and large rate hikes will
11 become more critical to the utilities' ability to maintain cash flow,
12 earnings power, and ultimately credit quality. That's why
13 **Standard & Poor's Ratings Services views rate recovery**
14 **mechanisms that allow for the timely adjustment of rates to**
15 **changing commodity prices and other expenses, outside of a**
16 **fully litigated rate proceeding, as beneficial to utility**
17 **creditworthiness.**

18 **[Emphasis added]**
19

20 This view has been reiterated by Moody's, which made the following statements in a
21 June 18, 2010 Special Comment titled, "Cost Recovery Provisions Key To Investor
22 Owned Utility Ratings and Credit Quality":

23 **Moody's views automatic adjustment clauses**, the most common
24 of which is for fuel and purchased power, the largest component of
25 utility operating expenses, **as supportive of utility credit quality**
26 **and important in reducing a utility's cash flow volatility,**
27 **liquidity requirements, and credit risk.**

28 . . .

29 Generally, the more of these clauses a utility has in place, the
30 stronger its scoring should be on this ratings factor and the lower
31 the credit risk.

32 **[Emphasis added]**
33

34 **Q. Should this risk reduction be reflected in a lower cost of equity for DP&L?**

35 A. Yes. Given the significance of the risk reduction to DP&L resulting from these
36 regulatory mechanisms, I recommend that if the Commission approves one or all of them,

³ These mechanisms, as well as their impact on DP&L's risks, are described more fully in the testimony of Staff witness Karl Pavlovic.

1 the lower-end of the cost of equity developed in my cost of equity analysis be used in
2 setting the Company's cost of capital.

3
4 **Q. Do any other Pepco Holdings subsidiaries have similar types of regulatory**
5 **mechanisms in place in their respective jurisdiction?**

6 A. Yes. According to DP&L's response to PSC-COC-11, DP&L has implemented a bill
7 stabilization adjustment ("BSA") in Maryland. In addition, Pepco (another subsidiary of
8 Pepco Holdings) has a BSA in Maryland and the District of Columbia. The response also
9 indicates that the goal of both the BSA's and DP&L's request in this proceeding are the
10 same – "to break the link between energy consumption and distribution revenues."

11
12 **Q. Did the Maryland and District of Columbia Commissions make any cost of equity**
13 **adjustments in connection with the approval of the BSA's?**

14 A. Yes. According to DP&L witness Hevert's Schedule RBH-10, the D.C. Commission
15 reduced Pepco's returns on equity by 50 basis points in the 2009 and 2010 proceedings in
16 which the BSA's were approved. In addition, both DP&L and Pepco had a 50 basis
17 point reduction in their respective Maryland decisions where the BSA's were approved.

18
19 **Q. What is the average authorized return on equity for electric utilities in cases where**
20 **decoupling mechanisms were approved?**

21 A. This is shown in DP&L's response to PSC-COC-22. The average of all the listed cases is
22 10.0 percent. This is well below the 10.75 percent requested by DP&L in this
23 proceeding. In addition, of the 37 decisions listed on this response, where a return on
24 equity is cited, only two return on equity awards are as high as the 10.75 percent level
25 DP&L is requested, while 22 are 10.0 percent or below.

26
27 **IX. CRITIQUE OF DP&L'S COST OF CAPITAL REQUEST**

28
29 **Q. What is your understanding of the cost of capital being requested by DP&L in this**
30 **proceeding?**

A. I understand that DP&L is requesting a 7.87 percent total cost of capital in this proceeding. This 7.87 percent total cost of capital is recommended by DP&L witnesses Kevin M. McGowan and Robert B. Hevert.

Q. What is the basis of DP&L's requested 7.87 percent total cost of capital?

A. According to Mr. McGowan's testimony, this is derived as follows:

Capital	Percent	Cost	Cost of Capital
Debt	50.52%	5.05%	2.55%
Equity	49.48%	10.75% *	5.32%
			7.87%

* As recommended by DP&L witness Hevert.

Q. Have you reviewed the testimony of DP&L witness Robert B. Hevert?

A. Yes, I have. Mr. Hevert is recommending a return on equity for DP&L of 10.75 percent. His 10.75 percent recommendation is derived as follows:

	Mean Low	Mean	Mean High
<u>DCF Results</u>			
30-Day Average	9.57%	10.44%	11.38%
90-Day Average	9.65%	10.51%	11.46%
180-Day Average	9.66%	10.53%	11.47%
		Current 30-Year Treasury (3.09%)	Near-Term Projected 30- Year Year Treasury (3.60%)
<u>CAPM Results</u>			
<i>Eighteen-Month Beta Coefficient</i>			
Sharpe Ratio Derived Market Risk Premium		11.12%	11.63%
DCF Derived Market Risk Premium		10.74%	11.24%
<i>Value Line Beta Coefficient</i>			
Sharpe Ratio Derived Market Risk Premium		10.59%	10.10%
DCF Derived Market Risk Premium		10.23%	10.74%
<i>Bloomberg Beta Coefficient</i>			
Sharpe Ratio Derived Market Risk Premium		11.23%	11.74%
DCF Derived Market Risk Premium		10.84%	11.35%
<u>Bond Yield Plus Risk Premium</u>			
	Current (3.09%)	Near-Term Projected (3.60%)	Long-Term Projected (5.65%)
Risk Premium	10.03%	10.24%	11.06%

1 **Q. Do you have any general comments about Mr. Hevert's testimony and conclusions?**

2 A. Yes, I do. Mr. Hevert's testimony significantly over-states the cost of capital for DP&L.
3 Each of his methods, and virtually all of the inputs used in his methods, is systematically
4 biased upward in a manner that significantly inflates his return on equity conclusions.
5

6 **Q. What are your disagreements with Mr. Hevert's constant growth DCF analyses?**

7 A. Mr. Hevert's constant growth DCF analyses are based on 30-day, 90-day and 180-day
8 average stock prices for the periods ending October 31, 2011, annualized dividends per
9 share as of October 31, 2011 and the average of Value Line, First Call and Zack's EPS
10 projections. His DCF analyses are applied to his group of nine electric utilities.

11 Mr. Hevert's constant growth DCF analyses are shown on his Exhibit RBH-1. It
12 is apparent from review of his Exhibit that his "Low DCF ROE" for each proxy company
13 reflects the dividend yield and the lowest of the three growth rates he considers. His
14 "Mean DCF ROE" considers the average of all three growth rates and his "High DCF
15 ROE" only considers the highest growth rate for each company. Stated differently, the
16 "High DCF" result considers only the highest of the three growth rates for each company
17 and ignores the other two growth rates. Thus, the "Mean High DCF" result for one proxy
18 company may reflect only the Zacks EPS Growth, while the "Mean High DCF" result for
19 another proxy company may reflect only the Value Line growth result. I note that only
20 his "Mean High DCF" results are as high as his 10.75 percent recommendation. I also
21 note that if one removes Hawaiian Electric Industries, the High ROE drops by almost 60
22 basis points. It is noteworthy that this company's EPS growth over the past five years
23 was negative, as shown on my Schedule 7, page 3, which further indicates that exclusion
24 reliance on forecasts EPS figures is misleading and improper. Mr. Hevert's DCF result
25 implicitly assumes that investors *only* consider the most optimistic growth rate for each
26 individual company in making investment decisions.

27 It is also apparent that Mr. Hevert's methodology focuses selectively and almost
28 exclusively on just one of the three growth rate estimates for each of his proxy
29 companies. For example, his "High DCF ROE" for his nine proxy companies relies
30 selectively on the following growth rates:
31

American Electric Power	Value Line EPS
Cleco	Zacks EPS
Great Plains Energy	Zacks & Value Line EPS
Hawaiian Electric	Value Line EPS
IDACORP	Zacks EPS
Pinnacle West Capital	First Call EPS
Portland General Electric	Value Line EPS
Southern Co.	Value Line EPS
Westar Energy	Value Line EPS

Q. Is it appropriate to focus on the highest growth rate, on a company-to-company basis, to determine the cost of equity for an electric utility such as DP&L?

A. No. It is neither realistic nor appropriate to focus on a single growth rate in a DCF context, especially when one “cherry picks” the highest growth rate for each company from among the different growth rate indicators that reflect the highest growth rate for each company. As I indicated above, Mr. Hevert’s analyses focus only on methods and data that produce the highest possible results.

Q. Are there any other problems with Mr. Hevert’s constant growth DCF analyses?

A. Yes. Even though Mr. Hevert purports to examine three alternative growth rates in his constant growth DCF analyses, in reality each of the three focuses on a single statistic: analysts’ forecasts of EPS. As a result, all of Mr. Hevert’s constant growth rates focus exclusively on EPS forecasts and exclude everything else.

Q. Why is it improper to rely exclusively on EPS forecasts in a DCF analysis?

A. There are several reasons why it is not appropriate to rely exclusively on analysts’ forecasts in a DCF context. First, it is not realistic to believe that investors rely exclusively on a single factor, such as analysts’ forecasts, in making their investment decisions. Investors have an abundance of available information to assist them in evaluating stocks; EPS forecasts are only one of many such statistics.

1 Second, Value Line – one of Mr. Hevert’s sources of EPS projections – publishes
2 both historic and forecasted data, as well as ratios, for a large number of publicly-traded
3 companies. Presumably, both types of information are published for the consideration of
4 its subscribers/investors. Yet, Mr. Hevert considers only *one* factor -- the *forecast* version
5 of EPS in his analyses.

6 Third, the vast majority of information available to investors, by both individual
7 companies in the form of annual reports and offering circulars, and by investment
8 publications such as Value Line, is historic data. It is neither realistic nor logical to
9 maintain that investors only consider projected (estimated) data to the exclusion of
10 historic (actual) data.

11 Fourth, there have been a number of academic studies that indicate that analysts’
12 forecasts have been overly-optimistic in the past. See, for example, a 1998 article in
13 *Financial Analysts Journal*, Vol. 54, No. 6, Nov./Dec. 1998, 35-42, titled “Why So Much
14 Error In Analysts’ Earnings Forecasts?” by Vijay Kumer Chopra. In this article, the
15 author concludes “Analysts’ forecasts of EPS and growth in EPS tend to be overly
16 optimistic.” He reasons that analysts’ forecasts of EPS over the past 13 years have been
17 more than twice the actual growth rate. Investors are aware of the propensity of analysts
18 to over-estimate EPS forecasts. In addition, the presumption that investors rely *only* on a
19 single projection, as was made by Mr. Hevert, implies that investors are unsophisticated
20 and unable to make their own decisions. This also is not realistic.

21 Fifth, the experience over the past several years should be a clear signal to
22 investors that analysts cannot accurately predict EPS levels. Few, if any, analysts
23 predicted the decline in security prices in the tech market crash of 2000-2002, as well as
24 the financial crisis of 2008 and 2009.⁴ Thus, relying only on forecasted EPS levels, while
25 ignoring historic EPS levels, cannot and will not produce accurate results.

26 In summary, investors are now very much aware of recent inabilities of security
27 analysts to accurately predict EPS growth. These problems clearly call into question the
28 reliance on analysts’ forecasts as the *only* source of growth in a DCF context. As a result,
29 the landscape has changed in recent years and investors have ample reasons to doubt the

⁴ As demonstration of this, see “Security Analysts and their Recommendations,
(<http://thismatter.com/money/stocks/valuation/security-analysts.htm>).

1 reliability of such forecasts at the present time. In light of the above, it is problematic to
2 rely exclusively on such forecasts in determining the cost of equity for DP&L.

3
4 **Q. Do EPS forecasts produce the highest growth rates and DCF results?**

5 A. Yes. As my Schedule 7 indicates, EPS forecasts are the highest of the potential growth
6 rate indicators for Mr. Hevert's proxy group. This is further indication of Mr. Hevert's
7 systematic upward biases.

8
9 **Q. Are you aware of any recent analyses and comments on the accuracy of analysts'**
10 **forecasts?**

11 A. Yes, I am. A 2010 study by McKinsey & Company, titled, "Equity Analysts: Still Too
12 Bullish" concludes that "after almost a decade of stricter regulation, analysts' earnings
13 forecasts continue to be excessively optimistic." I have attached a copy of this study as
14 Schedule 14. The significance of this study, as well as the points I raised previously, is
15 that investors should be hesitant to rely exclusively on analysts' forecasts in making
16 investment decisions.

17
18 **Q. Do you agree with Mr. Hevert's risk premium component of the CAPM?**

19 A. No. Mr. Hevert's utilize CAPM analyses two risk premium values: 10.80 percent and
20 10.28 percent. Both of these greatly exceed the long-term experience (e.g., 1929 to
21 present) of investment return differential between common stocks and government bonds,
22 as described earlier in my testimony. Over this period, risk premiums have averaged less
23 than 6 percent. Again, Mr. Hevert chooses data that produces higher and excessive
24 results.

25
26 **Q. Do you have any responses to Mr. Hevert's risk premium analyses?**

27 A. Yes. Mr. Hevert's risk premium approach compares the allowed ROEs for electric
28 utilities and 30-Year U.S. Government Bond yields over the period 1992 to the third
29 quarter of 2011. He then performs a regression analysis to develop an expected
30 relationship between 30-year U.S. Government Bond yields and the cost of equity for
31 electric utilities. He applies this regression result to three sets of 30-year U.S. Treasury

1 Bonds (i.e., 3.09 percent, 3.60 percent and 5.65 percent) and correspondingly arrives at
2 his 10.03 percent to 11.06 percent conclusion.

3 It is apparent from Mr. Hevert's Exhibit No. RBH-5 that the actual authorized
4 returns on equity for electric utilities have averaged well below the 10.50 percent to 11.06
5 percent he proposes. In contrast, his exhibit shows recent (i.e., 2005 to present) average
6 quarterly authorized returns on equity between 10.08 percent and 10.66 percent. Not
7 since the fourth quarter of 2004 has the average authorized return on equity been as high
8 as 10.75 percent.

9
10 **Q. Have you reviewed the testimony of DP&L witness Julie M. Cannell?**

11 A. Yes, I have. Ms. Cannell is also testifying in support of the proposed 10.75 percent
12 return on equity requested by DP&L. However, unlike Mr. Hevert, Ms. Cannell does not
13 perform quantitative analyses of the cost of equity for DP&L using cost of equity models
14 such as DCF and CAPM, but rather addresses DP&L's cost of equity from the
15 "perspective of investors." As she indicates on pages 3 and 4 of her testimony, she
16 addresses the following four areas:

17 Investors' perspective of risk due to the investment commitments currently being
18 undertaken by electric utilities in general and the Company in particular;

19
20 Investors' perception of risk as impacted by current macroeconomic conditions;

21
22 Investors' expectations for a constructive regulatory environment for Delaware so
23 as to ensure the Company's continued access to the capital markets; and,

24
25 Investors' expectations for Delmarva's return on equity ("ROE").
26

27 **Q. Do you have any comments concerning Ms. Cannell's testimony and conclusions?**

28 A. Yes, I do. As a general comment, Ms. Cannell's comments are not supportive of the
29 specific 10.75 percent return on equity requested by DP&L.
30

31 **Q. Ms. Cannell claims, on page 8, that the risk of investing in electric utilities has
32 changed in recent years. Do you agree with this assertion?**

33 A. No, I do not. Ms. Cannell cites several factors in support of her assertion, such as
34 restructuring of the industry, a new construction cycle, and regulatory risks. However,

1 the relevant demonstration of risks is how DP&L and other utilities have fared on a
2 relative basis in comparison to other types of investments. In this regard, I already noted
3 that DP&L's bond ratings by Moody's and S&P have been upgraded since 2008. These
4 recent bond ratings for DP&L indicate no increase in the relative risks for the Company
5 over the past several years.
6

7 **Q. Do you see any aspects or analyses in Ms. Cannell's testimony that justifies the 10.75**
8 **percent return on equity requested by the Company?**

9 A. No, I do not. In addition, I do not observe that Ms. Cannell makes any claims that she is
10 justifying a specific return on equity of 10.75 percent.
11

12 **Q. Does this complete your testimony?**

13 A. Yes, it does.